

CLAIMS

WHAT IS CLAIMED IS:

1. An integrated circuit comprising:
a contact pad formed of a metal;
a reinforcing layer underlying said contact pad, said reinforcing layer being formed of a metal different than the metal of the contact pad;
at least one metal layer under said reinforcing layer; and
at least one dielectric layer disposed under said reinforcing layer.
2. The reinforcing system of claim 1 wherein the metal of the reinforcing layer is a refractory metal.
3. The reinforcing system of claim 1 wherein said reinforcing layer is a patterned structure.
4. The reinforcing system of claim 1 wherein the metal of the contact pad is selected from the group comprising aluminum, copper and alloys of aluminum and copper.
5. The reinforcing system of claim 1 wherein the metal of the reinforcing layer is selected from the group comprising titanium, titanium nitride, tungsten, tungsten nitride, nickel, and alloys or combinations thereof.
6. The reinforcing system of claim 1, wherein said reinforcing layer is 100-600 nm thick.
7. A method of reinforcing a contact pad in a semiconductor integrated circuit comprising:
providing at least one metal layer below said contact pad; and
providing at least one reinforcing layer between said contact pad and said at least one metal layer, wherein said contact pad, reinforcing layer and at least one metal layer are in conductive contact.
8. The method of claim 7 wherein the contact pad is aluminum, copper, or combinations or alloys thereof.

9. The method of claim 7 wherein said at least one metal layer is aluminum, copper, or combinations or alloys thereof.
10. The method of claim 7 wherein said reinforcing layer is a patterned structure of a refractory metal.
11. The method of claim 10 wherein said refractory metal is selected from the group comprising titanium, tungsten, titanium nitride, tungsten nitride, nickel, nickel nitride, tantalum, and combinations and alloys thereof.
12. The method of claim 10 said reinforcing layer is about 100-600 nm thick.
13. The method of claim 10 wherein the reinforcing layer is about 200 nm thick.
14. The method of claim 7 wherein said reinforcing layer comprises a plurality of connected structural elements.
15. The method of claim 7 wherein said reinforcing layer comprises a plurality of repeating non-connected structural elements.